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HOFFMANN - EITLE, MÜNCHEN
PATENTANWÄLTE RECHTSANWÄLTE

Datum/Date

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Zeichen/Ref./Réf.

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Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

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Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire

MITSUBISHI DENKI KABUSHIKI KAISHA

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☒ abstract

☒ title

☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract:

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REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 08, 29 August 1997 (1997-08-29) & JP 09 103052 A (MITSUBISHI ELECTRIC CORP), 15 April 1997 (1997-04-15)	1,3,4	H02K1/16 H02K3/12 H02K3/28
Y	* abstract *	2	
Y	US 5 592 731 A (HUANG HAO ET AL) 14 January 1997 (1997-01-14) * column 5, line 47 - column 6, line 18; figures 1-7 *	2	
A	DE 196 33 399 A (SIEMENS AG) 26 February 1998 (1998-02-26) * abstract; figures 1,2 *	1,3-6	
Y,D	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11, 30 September 1999 (1999-09-30) & JP 11 155270 A (DENSO CORP), 8 June 1999 (1999-06-08) * abstract *	1,4	
Y	DE 17 63 506 A (LICENTIA GMBH) 11 November 1971 (1971-11-11) * page 3, line 19 - page 4, line 18; figure 1 *	1,4	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H02K
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 04, 30 April 1999 (1999-04-30) & JP 11 018378 A (DENSO CORP), 22 January 1999 (1999-01-22) * abstract *	1	
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 1 August 2003	Examiner Tangocci, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
✓ Y	US 5 982 068 A (KUSASE SHIN ET AL) 9 November 1999 (1999-11-09) * column 4, line 10 - column 6, line 40; figures 1-19 *	1-6	
✓ Y	US 4 102 040 A (RICH BERNARD J) 25 July 1978 (1978-07-25) * column 8, line 9 - column 10, line 43; figures 1-17 *	1-6	
✓ A	PATENT ABSTRACTS OF JAPAN vol. 007, no. 226 (E-202), 7 October 1983 (1983-10-07) & JP 58 116031 A (TOKYO SHIBAURA DENKI KK), 11 July 1983 (1983-07-11) * abstract *	7	
✓ Y	EP 0 917 278 A (DENSO CORP) 19 May 1999 (1999-05-19) * column 4, line 57 - column 8, line 25; figures 1-5 *	1,3,4,6	
✓ Y	GB 2 108 772 A (WESTINGHOUSE ELECTRIC CORP) 18 May 1983 (1983-05-18) * page 3, left-hand column, line 20 - page 4, left-hand column, line 22; figures 1-5 *	1,3,4,6	
✓ A	PATENT ABSTRACTS OF JAPAN vol. 011, no. 061 (E-483), 25 February 1987 (1987-02-25) & JP 61 221559 A (MATSUSHITA ELECTRIC IND CO LTD), 1 October 1986 (1986-10-01) * abstract *	7	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 1 August 2003	Examiner Tangocci, A
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.02 (p04C01)



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
✓ Y	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 01, 31 January 2000 (2000-01-31) & JP 11 285216 A (DENSO CORP), 15 October 1999 (1999-10-15) * abstract *	1	
✓ Y	--- PATENT ABSTRACTS OF JAPAN vol. 007, no. 027 (E-156), 3 February 1983 (1983-02-03) & JP 57 183236 A (MITSUBISHI DENKI KK), 11 November 1982 (1982-11-11) * abstract * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 1 August 2003	Examiner Tangocci, A
<div>CATEGORY OF CITED DOCUMENTS</div> <div><div>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</div><div>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document</div></div>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 01 2127

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-08-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
JP 09103052	A	15-04-1997	JP	3346968 B2	18-11-2002
			US	6317962 B1	20-11-2001
US 5592731	A	14-01-1997	US	5382859 A	17-01-1995
			AT	173567 T	15-12-1998
			AU	4842293 A	29-03-1994
			CA	2143637 A1	17-03-1994
			DE	69322167 D1	24-12-1998
			DE	69322167 T2	10-06-1999
			EP	0658291 A1	21-06-1995
			JP	8505036 T	28-05-1996
			JP	3350889 B2	25-11-2002
			WO	9406192 A1	17-03-1994
DE 19633399	A	26-02-1998	DE	19633399 A1	26-02-1998
			DE	29623073 U1	16-10-1997
JP 11155270	A	08-06-1999	JP	2927288 B2	28-07-1999
			JP	11164500 A	18-06-1999
			JP	11164504 A	18-06-1999
			JP	11075347 A	16-03-1999
			JP	11075346 A	16-03-1999
			JP	11075334 A	16-03-1999
			JP	3303773 B2	22-07-2002
			JP	11164506 A	18-06-1999
			JP	11164519 A	18-06-1999
			JP	11234933 A	27-08-1999
			JP	3271582 B2	02-04-2002
			JP	11187599 A	09-07-1999
			JP	11191946 A	13-07-1999
DE 1763506	A	11-11-1971	DE	1763506 A1	11-11-1971
JP 11018378	A	22-01-1999	NONE		
US 5982068	A	09-11-1999	WO	9854822 A1	03-12-1998
			JP	3303773 B2	22-07-2002
			JP	11164506 A	18-06-1999
			AU	3686799 A	02-09-1999
			AU	4222897 A	30-12-1998
			AU	710990 B2	07-10-1999
			AU	5829198 A	03-12-1998
			BR	9801214 A	13-07-1999
			BR	9801695 A	05-10-1999
			CA	2231123 A1	26-11-1998
			CA	2238504 A1	26-11-1998

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 01 2127

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-08-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5982068 A		CA 2238600 A1	26-11-1998
		CN 1202028 A ,B	16-12-1998
		CN 1208277 A ,B	17-02-1999
		CN 1208985 A	24-02-1999
		CN 1200591 A	02-12-1998
		DE 69800498 D1	01-03-2001
		DE 69800498 T2	06-09-2001
		DE 69801259 D1	06-09-2001
		DE 69801259 T2	13-06-2002
		DE 69803217 D1	21-02-2002
		DE 69803217 T2	29-08-2002
		DE 69803813 D1	21-03-2002
		DE 69803813 T2	12-09-2002
		DE 69803900 D1	28-03-2002
		DE 69803900 T2	12-09-2002
		DE 69810008 D1	23-01-2003
		DE 69811564 D1	03-04-2003
		DE 69812477 D1	30-04-2003
		EP 1026810 A1	09-08-2000
		EP 1179881 A1	13-02-2002
		EP 1237254 A1	04-09-2002
		EP 1227567 A2	31-07-2002
		EP 0881752 A1	02-12-1998
		EP 0881756 A1	02-12-1998
		EP 0881747 A2	02-12-1998
		EP 0881742 A2	02-12-1998
		EP 0881744 A2	02-12-1998
		EP 0881748 A2	02-12-1998
		EP 0881749 A2	02-12-1998
		EP 0881750 A2	02-12-1998
		EP 0881745 A2	02-12-1998
		EP 0881746 A2	02-12-1998
		EP 0881751 A2	02-12-1998
		EP 0881743 A2	02-12-1998
		EP 0881753 A2	02-12-1998
		ES 2154065 T3	16-03-2001
		ES 2187855 T3	16-06-2003
		JP 11164505 A	18-06-1999
		JP 3407643 B2	19-05-2003
US 4102040 A	25-07-1978	FR 2316776 A1	28-01-1977
		FR 2341976 A2	16-09-1977
		FR 2342576 A1	23-09-1977
		BR 7604385 A	26-07-1977
		DE 2629532 A1	27-01-1977
		ES 449497 A1	16-08-1977

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 03 01 2127

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-08-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4102040	A		GB 1546911 A	31-05-1979
			IT 1074246 B	17-04-1985
			JP 52034301 A	16-03-1977
JP 58116031	A	11-07-1983	JP 1595608 C	27-12-1990
			JP 2013539 B	04-04-1990
EP 0917278	A	19-05-1999	CN 1208277 A , B	17-02-1999
			DE 69801259 D1	06-09-2001
			DE 69801259 T2	13-06-2002
			DE 69801475 D1	04-10-2001
			DE 69801475 T2	16-05-2002
			DE 69804284 D1	25-04-2002
			DE 69804284 T2	31-10-2002
			EP 0881756 A1	02-12-1998
			EP 0910155 A1	21-04-1999
			EP 0917278 A2	19-05-1999
			JP 3381608 B2	04-03-2003
			JP 11164499 A	18-06-1999
			JP 11243673 A	07-09-1999
			JP 2000102215 A	07-04-2000
			US 6097130 A	01-08-2000
			US 6020669 A	01-02-2000
			US 6091169 A	18-07-2000
GB 2108772	A	18-05-1983	AU 8847582 A	12-05-1983
			CA 1183568 A1	05-03-1985
			IN 157129 A1	25-01-1986
			JP 58086836 A	24-05-1983
			ZA 8206900 A	26-10-1983
JP 61221559	A	01-10-1986	NONE	
JP 11285216	A	15-10-1999	NONE	
JP 57183236	A	11-11-1982	NONE	